

WHAT IS CLAIMED IS:

1. An internal combustion engine having an intake tract for intake air and an exhaust system for combustion products of the internal combustion engine, and further comprising:

- a secondary air charging system comprising a hydrodynamic compressor powered by a drive, and
- a sensor for generating a measurement signal suitable for determining a delivery rate of secondary air delivered by the secondary air charging system,

wherein said sensor is a temperature sensor which communicates with compressed air downstream from the compressor to measure the temperature of the compressed air.

2. An internal combustion engine according to claim 1, further comprising another temperature sensor which communicates with air upstream from the compressor to measure the temperature of the upstream air.

3. An internal combustion engine having an intake tract for intake air and an exhaust system for combustion products of the internal combustion engine, and further comprising

- a secondary air charging system comprising a hydrodynamic compressor powered by a drive, and
- a sensor for generating a measurement signal suitable for determining a delivery rate of secondary air delivered by the secondary air charging system,

wherein said drive comprises a turbine, which is arranged in parallel with a throttle valve in the intake tract, and

- said sensor is a temperature sensor which communicates with depressurized intake air downstream from the turbine to measure the temperature of the depressurized air.

4. An internal combustion engine according to claim 3, further comprising a second temperature sensor which communicates with compressed air downstream from the compressor to measure the temperature of the compressed air.

5. An internal combustion engine according to claim 4, further comprising another temperature sensor which communicates with air upstream from the compressor to measure the temperature of the upstream air.

6. An internal combustion engine according to claim 3, further comprising another temperature sensor which communicates with air upstream from the turbine to measure the temperature of the upstream air.

7. A method of monitoring secondary air injection into an exhaust system of an internal combustion engine, wherein a delivery rate of secondary air delivered through a secondary air charging system is monitored, said method comprising measuring heating of the secondary air which occurs due to compression, and using the measurement result is used as a measure of the delivery rate of the secondary air charging system.

8. A method according to claim 7, wherein a change in the measurement results over time is determined and used as a measure of the delivery rate of the secondary air charging system.

9. A method according to claim 7, wherein the measurement results are used for additional information with regard to functioning of the secondary air charging system.

10. A method of monitoring the secondary air injection into an exhaust system of an internal combustion engine, wherein a delivery rate of secondary air delivered by a secondary air charging system is monitored, and the secondary air charging system is driven by a turbine arranged in parallel with a throttle valve in an intake tract of the internal combustion engine, said method comprising measuring cooling of intake air which occurs due to expansion in the turbine, and using the measurement result as a measure of the delivery rate of the secondary air charging system.

11. A method according to claim 10, wherein a change in the measurement results over time is determined and used as a measure of the delivery rate of the secondary air charging system.

12. A method according to claim 10, wherein the measurement results are used for additional information with regard to functioning of the secondary air charging system.

14. A method of monitoring secondary air injection into an exhaust system of an internal combustion engine wherein a delivery rate of secondary air delivered by a secondary air charging system is monitored, and the secondary air charging system is driven by a turbine arranged in parallel with a throttle valve in an intake tract of the internal combustion engine, said method comprising:

- measuring the temperature of intake air downstream from the turbine;
- measuring the temperature of secondary air downstream from the compressor; and
- using the measured temperature of intake air downstream from the turbine and the measured temperature of the secondary air downstream from the compressor as a measure of the delivery rate of the secondary air charging system.

15. A method according to claim 14, wherein a change in the measurement results over time is determined and used as a measure of the delivery rate of the secondary air charging system.

16. A method according to claim 14, wherein the measurement results are used for additional information with regard to functioning of the secondary air charging system.